

The Court of Appeals for the Federal Circuit has examined the “useful, concrete and tangible result” requirement in a number of cases. In *In re Alappat*, 33 F.3d 1526, 31 USPQ 2d 1545 (Fed. Cir. 1994) (*in banc*), the court held that data, transformed by a machine through a series of mathematical calculations to produce a smooth waveform display on a rasterizer monitor, constituted a practical application of an abstract idea (a mathematical algorithm, formula or calculation), because it produced “a useful, concrete and tangible result,” i.e., the smooth waveform.

In *Arrhythmia Research Technology Inc. v. Corazonix Corp.* 958 F.2d 1053, 22 USPQ 2d 1033 (Fed. Cir. 1992), the court held that the transformation of electrocardiograph signals from a patient’s heartbeat by a machine through a series of mathematical calculations constituted a practical application of an abstract idea, (a mathematical algorithm, formula or calculation), because it corresponded to a useful, concrete or tangible thing, i.e., the condition of a patient’s heart. In *Arrhythmia*, the court noted the fact that the product is numerical is not a criterion on whether the claim is directed to statutory subject matter. *Arrhythmia, supra*, 958 2d at 1060, 22 USPQ 2d at 1039.

In *State Street, supra*, the court held that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constituted a practical application of a mathematical algorithm, formula, or calculation, because it produces “a useful, concrete and tangible result,” i.e., a final share price momentarily fixed for recording and reporting purposes.

In *AT&T, supra*, the court held that the derivation of a primary interexchange carrier (PIC) indicator using a simple mathematical principle was patentable subject matter since the claimed method produced a useful, concrete and tangible result

without pre-empting other uses of the mathematical principle. The court found it irrelevant that the claims lacked a physical transformation or a physical limitation.

In the present case, the claimed method obtains the at least three-constituent composition of each hydrocarbon mixture of the reference set by combination of the products of the separation thereof in proportion to the amounts of each separation product. The claimed method is useful for projecting dimensioning and management of surface installations of a hydrocarbon reservoir under production, as now more specifically set forth in the amended claims. It is clear that this result is or corresponds to a useful, concrete or tangible thing.

For the foregoing reasons, it is submitted the claimed invention as a whole, especially as presently amended, is drawn to statutory subject matter.

In view of the foregoing amendments and remarks, entry of this amendment and favorable reconsideration and allowance of all of the claims now in the application are requested.

To the extent necessary, applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in the fees due in connection with the filing of this paper, including extension of time fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (Case: 612.43683X00), and please credit any excess fees to such deposit account.

Respectfully submitted,

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